

THE
BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. LXX.

THURSDAY, MAY 5, 1864.

No. 14.

THE ARMY AS A SCHOOL FOR THE PHYSICIAN AND SURGEON.

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[Read before the Medical Society of the 2d Division, 3d Corps, Army of the Potomac, April 12th, 1864, and communicated for the Boston Medical and Surgical Journal.]

THE question has often presented itself to me, as it doubtless has to all the members of this Society during their connection with the Army, What kind of influence is a military experience exerting upon us as physicians? In our profession, as in every other walk of life, there is no such thing as remaining stationary. The physician does not pass through life upon "flowery beds of ease," any more than the rest of mankind. The strife in which we engaged when we started upon a professional life, is no more carried on at the same stand-point than the engagements with the rebels which we have witnessed. We must either advance or fall back. Fortunate will it be if we come to the conclusion, as we progress with this subject, that we have not emulated the Army of the Potomac in the latter manœuvre. Of course, the influence which has been produced upon us by our military experience is not precisely similar on any two of us. If we should compare thoughts on the subject, we should not exactly agree. I intend simply to give a few ideas which have occurred to my mind, as I have thought of the matter from time to time.

To the fathers among us, represented here by our worthy President, who are "rooted and grounded in the faith," a detour of three years from the road they have been travelling a score or more, appears so slight a matter, that "when this cruel war is over" they can easily return to the old familiar ways, and walk therein as though they had never left them. The principles of the profession, and the ideas they have gained in the practice of it, have become a part of themselves never to be forgotten. But to those of us who had just begun to walk the rugged road of a professional life, this digression will remove us for so long a time from the things that

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were just beginning to look familiar, that we shall have to learn over again many of the steps we had already taken.

As a school for the man who intends to devote himself to operative surgery, the Army is, in my opinion, unequalled. The necessity for rapidity of action, at a time when men with wounds of every form and degree of severity are being brought from the battle-field by scores, requires the exercise of a quick judgment, confidence in one's own ability, and dextrous manipulation. These qualities, when brought into requisition so frequently, are of necessity constantly improved, and the field hospital is thus rendered preëminently the place for perfecting the operative surgeon. But this general statement requires some qualification; for while sound judgment, confidence and skill are equally necessary for the surgeon in civil life and in the army, the battle-field, from the character of the lesions witnessed there, more particularly fits him for a *military* surgeon. Amputation and excision for gun-shot injuries form nearly the sum total of his experience. Most of the splendid special operations of civil life, which we felt ourselves pretty well posted in, theoretically, during our course of study, we are gradually forgetting.

These remarks, of course, bear simply upon those who have left the civil pursuits of the profession, and come out for three years active service in the field. The regular army medical officer, who at times has charge of large hospitals, has the opportunity and means to perform as great a variety of operations as any surgeon in civil life.

Most of us, however, did not study medicine for the sole purpose of fitting ourselves to hold a knife in our hand and cut away at some unfortunate fellow-being. The number of surgical operations is comparatively so small in time of peace, that there is necessity for but a limited number of operators. Therefore the wants of society, as well as our own tastes, pointed out to us the quiet round of duties of the practitioner of medicine. Fortunate it is for humanity, that so many noble men *have* directed their studies more particularly towards the science and art of surgery, and that the records of the present generation show no lack of men highly skilled in the performance of operations.

Now having disposed of the older members of the profession, who, we take it for granted, are not injured in a professional point of view by an army experience—and of the regular army medical officer, who has devoted himself particularly to the practice of military medicine and surgery—what can we say of the effect of his three years' service in the army, upon the young practitioner? I will give you, in the first place, my opinion, and then my reasons for it. This opinion, perhaps, it would not be proper to state, except in a circle of medical officers.

I cannot but think, from my own experience, and from conversation with others, that the influence of a military life upon the young

physician is, in the main, decidedly bad. And I believe this to be the honest opinion of nearly every medical officer with whom I have talked upon the subject. I qualified my opinion by saying "in the main." Now let us see what advantages there are, before studying the disadvantages.

One of the greatest benefits, it appears to me, is, that it gives the young man confidence. He is called upon to practise amongst a set of rough men, where he is not obliged to cater to the delicate sensibilities which would pervade a home circle and make most young men somewhat timid at first, in regard to their ability to please. Soon, the machinery of his department gets to working smoothly, and he finds there is nobody to interfere or complain, if he does his duty. And in a very short time, by constant communication with so many sick, he acquires a confidence which he might not gain at home in the course of years.

Another advantage is, that he gains a practical knowledge of gunshot wounds, and a dexterity in amputating, which he would not get at home, and which at some time may be of vast advantage to him in civil life.

While we acknowledge, however, these and perhaps other acquisitions to be of great service to him, are they not counterbalanced greatly by the disadvantages? These may be summed up in one—viz., the gradual falling back in the general knowledge of his profession. To what is this due? As much to the habits of life which a person contracts in the army, as to anything else. All regularity of habits is entirely broken in upon. Having so little to do, we get prodigiously lazy; too indolent to apply ourselves to study, even to the extent of the small means we have. The reading of works on matters of general professional interest, is but little in amount, compared with what it would be at home. Until quite recently, we have had no opportunity of associating, in a professional manner, with our medical brethren, by means of societies. And, notwithstanding the advantages we may gain from this association, we cannot hope to obtain the improvement from it that we could in a society of men who are constantly brushed up to the present ideas of the medical world, which, in the field, no matter how assiduous a man may be, is a condition it is impossible for him to keep himself in.

To consider some of the disadvantages we labor under in trying to keep pace with the advance of our profession, let us examine them briefly as connected with the branches taught in our medical schools. In regard to anatomy and physiology, the young man with his new diploma, as a general thing, does not give up his dissections and experiments. He has plenty of time, while waiting for practice, to amuse and instruct his mind in this manner. When he enters the army, he is immediately debarred from these pursuits to any considerable degree. Some of the most important branches of our pro-

fession were entirely stricken from our experience when we became medical officers. I allude to midwifery and the diseases peculiar to women and children. To be sure some of us may have had the opportunity of attending, through the pangs of childbirth, some savory contraband; or of watching the mutations of disease in some fair damsel at division headquarters; or of alleviating the infant sufferings of some tender offshoot of humanity. But, as a general thing, these very important departments of medical science are as a thing of the past to the young physician in the army. He must study them all over again.

Now let us look at our disadvantages in regard to the practice of medicine. In the first place, at home, when the physician is called to see a person, he takes it for granted that his patient is sick, and never thinks of doubting the truth of what he says in regard to his pains, aches and queer feelings. There is no particular object for equivocation. But how is it in the army? O! ye malingerer—for what a vast amount of trouble, and wear and tear of patience on the part of your surgeon, are ye accountable! What little malingering there is at home, is generally treated without the aid of the physician. Little Johnny doesn't want to go to school, and says he has the stomach-ache. Grandma's services are called in requisition. She says, Johnny must take some castor oil. He refuses. Then Johnny must go to school; and he goes, because castor oil is worse than school. Detection is not so easy, however, in the army. There is a prospect of an engagement with the enemy, and Patrick O'Toole has a severe pain in his back, tearing him all to pieces. We say that O'Toole must have a large blister on his back. Patrick submits, because a blister, he thinks, is not so bad as fighting. So, in the first place we have to find out whether a man is sick, and then go to work to treat his disease. And under what advantages do we treat him? We have a very small variety of medicines to select from, although the supply table contains most of the old-fashioned drugs, and I suppose is extensive enough, with the exception of calomel and tartar emetic, which were stricken from the table because some persons, who ought to have been dismissed from the service, did not know how to use them. We have to treat our patients at times in tents, which cannot be made comfortable in cold winter weather, although at the approach of spring we get new tents and boards to floor them with. We often cannot get the quality and variety of diet adapted to the wants of certain cases of disease. The men frequently have to be treated in a malarious region for diseases which seem to baffle all remedial measures, and we find it almost impossible to get the patient removed to a more healthful climate. We have the element of home sickness to contend with, which is not unfrequently the main cause of keeping a man on his sick bed. These, and many other causes, show that we treat disease here under a great disadvantage, and that the young man does not gain that experience in the proper

management of the sick, which he ought to be gaining to fit him for future usefulness in his profession.

In regard to progress in the study of *materia medica*, about all we can do is to read the Dispensatory; a not very exciting species of entertainment, certainly. Our observations on the operations of the older drugs are confined to the very few articles given in the supply table—and of the new preparations which from time to time are placed before the profession in the journals, we know nothing.

Chemistry, also, which to most young men is a very pleasing branch of study, and which is a most valuable adjuvant to the practice of medicine, is entirely laid aside, for the reason that we have neither apparatus nor tests with which to pursue investigations.

The facilities for the study of diseased organs after death are so extremely limited, that we may consider ourselves nearly as much debarred from the study of pathological anatomy, as from the preceding branch.

The advantages and disadvantages of an army life in regard to improvement in surgery, have been set forth, as far as operative surgery is concerned, in the early part of this paper. The remarks in regard to the disadvantages we labor under in the practice of medicine, refer equally well to the treatment of surgical disease.

I have thus gone over briefly the advantages and disadvantages of an army experience to the medical man—more particularly as regards the young physician, just entering upon practice; and if the ideas of the members of this society upon the subject agree with mine, we must come to the conclusion that some of the most important branches of the profession remain dead to him for the time being.

In presenting these thoughts to your minds, only that which bears upon the subject in a professional light is adduced. Patriotism or other motives will, in the minds of some, outweigh all professional disadvantages. Of these I have nothing to say.

Hoping to hear the opinions of older and wiser heads than mine, I leave the subject for your discussion.

DISCUSSION.

Dr. CALHOUN remarked that, in his opinion, the disadvantages of the army and field, to the medical officer, in a professional point of view, had been a little highly colored by the essayist, while some of the advantages had not been mentioned. One of the benefits derived from army practice is that the young medical man learns to *systematize*. The essayist had alluded to the restriction of the practitioner in the field and in camp to a comparatively limited *materia medica*. He thought that the supply table furnished all the variety of medicinal agents required; and considered the objection to army practice, as narrowing down our views and experience of the action and value of remedies, as of little weight. Over-medication was a

much more serious and frequent error in civil practice than is true of the opposite in that of the military surgeon. The poorest practitioners, in his opinion, were those addicted to over-medication, and who were constantly experimenting with new remedies.

Another important principle was demonstrated and impressed on the mind of the surgeon in army practice, namely, the prevention of disease, by proper attention to *hygiene* and *sanitary laws*. At home, the practitioner's efforts are chiefly directed to the cure, not to the prevention of disease, which latter is the great aim in military practice. A recent English publication by Dr. Shrimpton, on the Crimean war, has very forcibly illustrated what can be achieved in preventing disease, by proper sanitary measures and expedients, and what fearful results follow from their neglect.

Again, army life has this advantage to the medical man, that it enlarges his knowledge of men, and sharpens his faculties in reading and interpreting human nature and character.

Dr. IRWIN was well aware of the great difference between army and civil practice; but while he could not deny the disadvantages of the former, in some respects, in others he thought there was a decided advantage. Army surgeons learn to rely more on their own observation; the mind is trained to come more rapidly to true conclusions, and a correct diagnosis, and to meet emergencies, than in private practice. He learns to rely on absolute facts more than on the statements of the patients, in which we do not repose the same implicit belief as in private practice. He could not agree with the author in regard to the want of opportunity for autopsical observations. He considered them ample, if embraced. The great drawback in field practice was the want of facility for observing results.

Dr. JEWETT referred to another reason why army practice is not calculated to enhance the professional attainments of the physician. *Chronic diseases* are a sealed book to us here. As soon as a disease becomes settled, the patients are sent off, and we have no opportunity to study its progress. Furthermore, he thought there was as much tendency, if not more, to *routine* in army as in private practice.

Dr. VANDEVERE agreed with Dr. Jewett. The number of serious diseases in the army is very limited; there is not much of a variety. As soon as a bad case turns up, he is sent to general hospital. The same circumstances interfere with surgical practice.

Dr. A. N. DOUGHERTY, Medical Director of the 2d Corps, an honorary member of the Society, being present, was introduced by Dr. Calhoun, and invited to take part in the discussion. He remarked that the subject had already been so fully discussed that he had little to add. One of the greatest disadvantages, perhaps, resulting from army practice, was the assuming of a certain brusqueness in manner, a sort of arbitrary way, which might not be very popular at home, and might prejudice people against the army surgeon returning to civil practice. The opportunities for professional study he

considered to be as ample here as anywhere, excepting, of course, minute investigations of a chemical or microscopic nature.

He wished to ask the opinion of members on a new method of treating pneumonia, of which he had been informed by a medical gentleman of Sacramento, Cal., in charge of a hospital there. The treatment consists in the continued administration of moderately large doses of acetate of lead. In 20 cases reported, all of which recovered, the average duration of the disease is claimed as only seven days; certainly a very favorable result, if future experience should confirm the efficacy of the treatment.

The same authority spoke of syphilis as being exceedingly frequent and unusually virulent in Sacramento, and in most cases traceable to prostitutes among the Chinese population of that city, who appeared to be peculiarly subject to the ravages of the venereal poison.

Dr. Dougherty then called attention to the comparative utility of hospital knapsacks and the so-called "field companion." The general expression of the members was in favor of the "field companion."

A vote of thanks was passed to Dr. Whiston for his able and interesting essay, and the Secretary instructed to send it to such journal for publication as the author might designate.

TRICHINIASIS IN GERMANY.

A FEW months ago there was a festive celebration in Hettstädt, a small country town near the Hartz Mountains, in Germany. Upwards of a hundred persons sat down to an excellent dinner, and, having enjoyed themselves *more majorum*, separated, and went to their homes.

Of these one hundred and three persons, mostly men in the prime of life, eighty-three are now in their graves; the majority of the twenty survivors linger with a fearful malady; and a few only walk apparently unscathed among the living, but in hourly fear of an outbreak of the disease which has carried away such numbers of their fellow-diners.

They had all eaten of a poison at that festive board, the virulence of which far surpasses the reported effects of *aqua tophana*, or of the more tangible agents described in toxicological text-books. It was not a poison dug out of the earth, extracted from plants, or prepared in the laboratory of the chemist. It was not a poison administered by design or negligence. But it was a poison unknown to all concerned; and was eaten with the meat in which it was contained, and of which it formed a living constituent.

When the festival at Hettstädt had been finally determined upon, and the dinner had been ordered at the hotel, the keeper of the tav-

ern arranged as bill-of-fare. The introduction of the third course, it was settled, should consist, as usual in those parts of the country, of *Rostewurst und Gemüse*. The *Rostewurst* was, therefore, ordered at the butcher's the necessary number of days beforehand, in order to allow of its being properly smoked. The butcher, on his part, went expressly to a neighboring proprietor, and bought one of two pigs from the steward, who had been commissioned with the transaction by his master. It appears, however, that the steward, unfortunately, sold the pig which the master had not intended to sell, as he did not deem it sufficiently fat or well-conditioned. Thus the wrong pig was sold, carried on a barrow to the butcher, killed and worked up into sausages. The sausages were duly smoked and delivered at the hotel. There they were fried and served to the guests at the dinner-table.

On the day after the festival, several persons who had participated in the dinner were attacked with irritation of the intestines, loss of appetite, great prostration and fever. The number of persons attacked rapidly increased; and great alarm was excited in the first instance by the apprehension of an impending epidemic of typhus fever or continued fever, with which the symptoms observed showed great similarity. But when, in some of the cases treated by the same physician, the features of the illness began to indicate at first acute peritonitis, then pneumonia of a circumscribed character, next paralysis of the intercostal muscles and the muscles in front of the neck, the hypothesis of septic fever, though sustained in other cases, had to be abandoned with respect to these particular cases. Some unknown poison was now assumed to be at the bottom of the outbreak; and an active inquiry into all the circumstances of the dinner was instituted. Every article of food and material was subjected to a most rigid examination, without any result in the first instance. But when the symptoms in some of the cases invaded the muscles of the leg, particularly the calves of some of the sufferers, the description which Zenker had given of a fatal case of trichinous disease was remembered. The remnants of sausage, and of pork employed in its manufacture, were examined with the microscope, and found to be literally swarming with encapsulated trichinæ. From the suffering muscles of several of the victims small pieces were excised, and under the microscope found charged with embryonic trichinæ in all stages of development. It could not be doubted any longer, that as many of the one hundred and three as had partaken of *Rostewurst* had been infested with trichinous disease by eating of trichinous pork, the parasites of which had, at least in part, escaped the effects of smoking and frying.

This awful catastrophe awakened sympathy and fear throughout the whole of Germany. Most of the leading physicians were consulted in the interest of the sufferers, and some visited the neighbourhood where most of the afflicted patients remained. But none could

bring relief or cure. With an obstinacy unsurpassed by any other infectious or parasitic disease, trichiniasis carried its victims to the grave. Many anthelmintics were arrayed to destroy, if not the worms already in the flesh, at least those yet remaining in the intestinal canal. Picric acid was employed until its use seemed as dangerous as the disease; benzole, which had promised well in experiments upon animals, was tried, but was unavailing. As case after case died off, and the dissection of each proved the parasites to have been quite unaffected by the agents employed, the conviction was impressed upon every mind that a man afflicted with flesh-worm is doomed to die the slow death of exhaustion from nervous irritation, fever, and loss of muscular power, in systems essential to existence. But medical science had only just unravelled a mystery; and if it could not save the victims, it was determined, at least, to turn the occasion to the next best account. The cases were, therefore, observed with care, and chronicled with skill. All the multifarious features of the parasitic disease were registered in such a manner, that there can hereafter be no difficulty in the diagnosis of this disorder. A valuable diagnostic feature was repeatedly observed—namely, the appearance of the flesh-worm under the thin mucous membrane on the lower side of the tongue. The natural history of trichina in man was found to be the same as that in animals.

All observations led to the conviction that the trichina encapsulated in the flesh is in the condition of puberty. Brought into the stomach, the calcareous capsule is digested with the flesh, and the trichina is set free. It probably feeds upon the walls of the intestines themselves; for the irritation of the intestines begins before the bringing forth of young trichinæ has taken place. Copulation is immediately effected; and, within a few hours, or a short portion of days, from sixty to eighty live embryos leave the female, and begin their own career of destruction.

This consists, in the first instance, in an attempt to pierce the walls of the intestinal canal. Great inflammation of the entire surface ensues, ending not rarely in death of the villous or mucous membrane, or in the formation of masses of pus on its surface. Sometimes there are bloody stools. But these severe symptoms only ensue when much trichinous meat has been eaten. When less has been consumed, pain and uneasiness in the abdomen are produced, accompanied, however, in all instances by wasting fever and prostration. The embryos actually pierce the intestines, and are found free in the effusion, sometimes serous, sometimes purulent, which is always poured out into the abdominal cavity. Thence they again proceed towards the periphery of the body, pierce the peritoneum, causing great irritation, and sometimes peritonitis, to the extent of gluing the intestines together to a coherent mass. They next proceed to the muscles nearest to the abdomen; arrived at the elementary muscular fibres, which, under the microscope, appear as long cylinders with many transverse stria,

they pierce the membranes, enter the fibres, eat and destroy their striated contents, consume a great part of the granular detritus, moving up and down in the fibres until grown to the size necessary for passing into the quiescent state. They then roll up in spiral or other irregular windings, the bags of the muscular fibres collapse, and only where the trichinæ lie a calcareous matter is deposited, perhaps by the trichinæ themselves, which hardens into perfect capsules round the parasites. A muscular fibre may harbor one or several parasites; but every fibre invaded by a single parasite loses its character entirely, and becomes a bag of detritus from one end to the other.

If it be remembered that one ounce of meat filled with trichinæ may form the stock from which, in a few days, three millions of worms may be bred; and that these worms will destroy in the course of a few weeks not less than two millions of striated muscular fibres—an idea of the extent of destruction produced by these parasites can be formed. We are not in a position to say to what proportion of the fifty or sixty pounds of muscle required for the performances of the human body these two millions of elementary fibres actually amount. In the muscles nearest to the abdomen, the destruction is sometimes so complete that not a fibre free from parasites can be found. This amounts to complete paralysis. But death is not always produced by the paralysis; it is mostly the result of paralysis, peritonitis, and irritative fever combined. No case is known in which trichiniasis, after having declared itself, became arrested. All persons affected have either died, or are in such a state of prostration that their death is very probable.

Most educated people in Germany have, in consequence of the Hettstädt tragedy, adopted the law of Moses, and avoid pork in any form. To some of the large pig-breeders in Westphalia, who keep as many as two thousand pigs, the sinking of the price of pork has been a ruinous—at the least, a serious—loss. In the dining rooms of the hotels in the neighborhood of Hettstädt, notices are hung up announcing that pork will not be served in any form in these establishments. To counteract this panic, the farmers' club of the Hettstädt district gave a dinner, at which no other meat but pork was eaten. But it has had no appreciable effect. The raw ham and sausages of Germany are doomed to extinction. The smoked and fried sausages must necessarily be avoided. * * * *

In the south of Germany, some people now say that the Hungarian pigs are most frequently affected with trichinæ. This rumor, like the famous pork dinner of the farmers' club, may, however, have been set up with the intention of quieting apprehension about the native pigs. We have already mentioned the accident which befell the crew of a merchant vessel. They shipped a pig at Valparaiso, and killed it a few days before their arrival at Hamburg. Most of the sailors ate of the pork in one form or another. Several

were affected with trichinæ and died. Of those whose fate could be inquired into, only one seems to have escaped the parasites. Another outbreak in Saxony has carried away twelve persons. A fourth wholesale poisoning by trichinæ is just reported from Offenbach, the Birmingham of Hesse-Darmstadt. Of upwards of twenty persons infected, three had already died when our correspondent's letter left. Numerous sporadic cases of fever, and epidemics of inscrutable peculiarity, but referred to an anomalous type of fever, are now claimed by medical authors, and with much show of reason, to have been outbreaks of trichiniasis, or flesh-worm disease. Several German physicians experimentalized with a view of finding a cure for this terrible disorder. Professor Eckhardt at Giessen, we are told, has obtained permission to try the disease and supposed remedies upon a murderer under sentence of death. We have not been told whether his reward in case of success is to be a commutation of his capital sentence; but should hope this to be the case. The experiment, even if it should not have the romantic character indicated, will probably teach some curious details of the life of these parasites. Almost everywhere, the commonest rules of cleanliness are disregarded in the rearing of pigs. Yet pigs are naturally clean animals, avoiding, like dogs and cats, all contact with ordure. Though they burrow in the earth, and in summer wallow in the mud, they abhor the heaps of excrements mixed with straw in and upon which they are frequently kept. A due regard to cleanliness will prevent trichinæ in the pig. In wild boars, of which many are eaten in the country round the Hartz Mountains, trichina has never been found. Neither has it been met with in sheep, oxen, or horses. Beef is the safest of all descriptions of meat, as no parasites have ever been discovered in it. They have also never been found in the blood, brain, or heart, of those animals in whose striated muscles they love to reside.—*British Medical Journal.*

[Lately, the common ground-worm has been found to be infested by trichinæ, one of the probable sources of the infection of swine.]

ON THE CHANGES OF FORM OF MAMMALIAN BLOOD-CORPUSCLES.

THE *Centralblatt für die Medicinischen Wissenschaften* of the 5th ult. contains an important paper by Dr. Klebs, assistant at the Pathological Institute at Berlin, on "The Changes of Form of the Red Blood-corpuscles in Mammalia." Dr. Klebs finds that, when the disk-shaped blood-corpuscles, which are found joined together in so-called *rouleaux* in the cooled blood of dead animals, are heated to the temperature of the body, care being taken to prevent evaporation, the following change of shape takes place. The substance of the corpuscle begins to accumulate at one part of the margin, and the outline of the corresponding opposite part becomes flattened

and afterwards indented. The substance then generally accumulates more strongly at the ends caused by the indentation; hard protuberances (*zacken*, Dr. Klebs calls them) are found, which project over the margin, and a broader protuberance is often formed first, and then divides into two smaller ones. This process is repeated over the whole of the disc of the blood-corpuscle, which thus becomes quadrangular, or, more frequently, pentagonal or hexagonal in shape. A strong affluence towards a point always precedes the formation of the protuberances, which alter their shape very slowly, but constantly; they are seen to be absorbed completely, and new ones then appear near the places of the old ones. The corpuscles with protuberances rest upon the lengthening and shortening ends of these protuberances, and the formation of the latter occasions a very peculiar motion of the corpuscles, inducing a state of constant oscillation, while the liquid is perfectly motionless. When two corpuscles are touching one another with their horizontal protuberances, and vibrating towards each other, slight rotatory movements often occur. The protuberances are triangular when in a fresh state and viewed sideways; they do not protrude much above the surface. In the *rouleaux* the terminal blood-corpuscles first exhibit the protuberances, and that on the free side. Six various sorts of blood were examined, and all exhibited the phenomenon in the same way; but there were some differences as regards the period when the contraction occurred. The contractibility of the blood-corpuscles survives the death of the individual a considerable time; in the case of some, *rouleaux* are commonly found which separate into forms with protuberances on the application of heat twenty-four hours after death; after forty hours they generally appeared globular, and no longer adhered to one another. Nasse and Bothin state that the corpuscles become ultimately round when immersed in a concentrated solution of salt; but Dr. Klebs finds the shape depends upon what it was previous to immersion, and that the corpuscles with protuberances retain that shape after immersion, at least for a time (allowance being made for the effect of exosmosis), although they appear to be petrified, as it were, and no further movement of contraction is observed. Dr. Klebs has made use of this power of the salt solution to arrest any change of form in the corpuscles to determine what shape these bodies have when circulating in the living animal. A vein of a rabbit was cut open and the wound filled with the salt solution. The result was that the corpuscles, on examination, appeared to be exceedingly thin discs with a great tendency to the formation of folds. The central depression was much more extended than when seen under ordinary circumstances, and the broad margin thinner. A great number of the corpuscles showed the form with the protuberances described above. Dr. Klebs, therefore, concludes that the contraction must occur within the bloodvessels. He finishes his paper by giving as his reason for publishing these results of his researches

with the least possible delay, and not waiting till he could work up the question from various points of view, that he hopes to secure very numerous fellow-laborers in this most interesting field of research.—*The London Reader.*

VINEGAR AND ITS ADULTERATIONS.

CIDER vinegar has always been preferred by our people on account of its wholesome properties; and at one period a sufficient quantity of it was manufactured to supply the public demand. This is not now the case, as most of the vinegar which is at present consumed in cities is made from high wines (whiskeys) and molasses. Vinegar may be made by several different processes, and from a great number of substances. It is made from apple-juice by the slow process of fermentation, but from high wines or liquids containing alcohol it is manufactured by a quick process, consisting of exposing warm high wines mixed with water to the atmosphere, while passing in thin streamlets over a very extended surface of beech-wood shavings. By this mode of operating, the alcohol combines chemically with a certain quantity of oxygen and forms acetic-acid vinegar. This is the system which is now most extensively followed in vinegar manufactories. Any substance which contains sugar may be converted, by fermentation, into alcohol, and finally into acetic acid. At present, when high wines and substances containing sugar, such as molasses, are so high in price, possibly the vinegar which is made from these may be adulterated by sulphuric acid before it reaches the purchaser. It is well known that when the price of any article becomes high, adulteration is practised to a much larger extent with it, because the addition of a small quantity of a cheap foreign substance largely increases the profits. As a small quantity of sulphuric acid added to vinegar permits the use of a large quantity of water, this acid has been frequently and extensively used for adulteration. It has been asserted by manufacturers of vinegar that as the acetic acid made from weak wines, beer, malt, and molasses, was liable to putrid fermentation and decomposition, some sulphuric acid was necessary to counteract this tendency and prevent it from becoming turbid and vapid. The least quantity employed for this purpose was about one gallon to one thousand gallons of vinegar. But when the manufacture of vinegar is properly conducted, there is no necessity for adding any sulphuric acid. The mode of detecting such acid in vinegar is described by Dr. Muspratt as follows:—"If the vinegar be suspected to contain a considerable quantity of sulphuric acid, make a solution of sugar and heat it to 200° Fah.; if a drop of the suspected vinegar is added to this, it will carbonize the sugar, causing a blackish spot to appear at the point where the vinegar came in contact with the saccharine solution. This happens when the

vinegar contains one three-hundredth of its weight of sulphuric acid; when it contains from six-hundredths to eight-hundredths of its weight of this acid, it produces a greenish spot in the solution." But the principal test for this acid in vinegar is the use of a soluble salt of baryta, such as the chloride. When this is added to vinegar containing sulphuric acid, insoluble sulphate is produced, which falls down in a heavy white powder. Moderate quantities of good vinegar are beneficial in assisting digestion, but sulphuric acid does not favor digestion, and when taken in considerable quantities it injures the coating of the stomach. In every sense, then, sulphuric acid is an injurious adulteration of vinegar, and should not be permitted. Hydrochloric and nitric acids have also been employed for adulterating vinegar, but to such a limited extent that they do not invite public attention.

Vinegar made from pure alcohol and water does not possess the flavor of wine or cider vinegar, and is therefore inferior to them for table use; but a little acetic ether added to it renders it agreeable. Raw spirits containing some fusel oil produce a more pleasantly flavored vinegar than refined spirits; hence a few drops of fusel oil added to rectified spirits, in making the wash for vinegar, improves its aroma. A little oil of cloves or butyric ether added in the same manner improves its flavor. A very small quantity of cider vinegar gives a large quantity of whiskey vinegar a pleasant flavor. An infusion of chicory is sometimes added to high wine vinegar, to give it the color of cider vinegar. Fancy or aromatic vinegars are sometimes used for the toilet, for fumigation, and table use. A good aromatic vinegar is made by macerating cloves, rosemary, sage, nutmegs, caraway, peppermint, cinnamon, and calamus, each one ounce, in two gallons of strong vinegar, adding a little tincture of camphor. In fact, any of the essential oils, such as those of cloves, bergamot, or lavender, in vinegar, render it aromatic.—*Scientific American.*

Reports of Medical Societies.

EXTRACTS FROM THE RECORDS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. BY FRANCIS MINOT, M.D., SECRETARY.

MARCH 14th.—*Fatal Case of Epistaxis.*—Reported by Dr. AYER.

I. M., aged 62, a provision dealer in this city, of temperate and industrious habits, and of decidedly lymphatic diathesis, had abstained mostly from meats for several months, for want of appetite, and had taken milk as a chief article of diet. For years he had been subject to frequent attacks of nose-bleed. During the last year he had been overworked, and was confined to an ill-ventilated shop. In February last Dr. Ayer first visited him, on account of a troublesome haemorrhage of the gum, at the base of a decayed molar tooth. The bleeding was stayed by application of dilute liq. chlor. ferri. His appear-

ance was anaemic, pulse feeble, and muscles shrivelled and particularly flabby. Tinct. ferri mur., gtt. xv. *ter die.*, was ordered, free use of animal food, and less labor. The following week, bleeding occurred profusely from a slight scratch on the hand. A haemorrhagic tendency was exhibited throughout the system. Influenza succeeded, with abundant coryza, and daily or more frequent attacks of nose-bleed, resulting from "blowing the nose, or warming the feet." Yet he daily attended to his business, though evidently too weak to make the necessary exertion.

On March 6th, at 5.30, A.M., Dr. Ayer was again called in haste to him. A neighboring physician had been called in two hours before, and was present. The hemorrhage had commenced at 2 o'clock, and continued to increase up to this period. The right nostril was bleeding profusely, and the left slightly; the blood also poured down freely through the posterior nares, and was discharged from the mouth. The pulse was regular, though weak; heart's action rapid. The patient was sitting on the bed. Pinching the nostrils availed naught. The nostril was plugged with cotton saturated with liq. chlor. ferri. dilut., and afterwards with a strong solution of tannic acid, without effect. Ice was freely used over the nose and in the mouth. Injections of the iron and tannin were subsequently employed. It was thought desirable to avoid plugging the posterior nares, especially as no proper instrument was at hand. Brandy and wine were administered freely. At 7 o'clock the bleeding had decidedly diminished, both front and back. Occasional fainting occurred, which soon passed off. At 8 o'clock the haemorrhage had entirely ceased; the patient occasionally raising slight coagula. He continued comfortable till 10, when Dr. Ayer left him, ordering a continuance of the tr. ferri., brandy and ice, and nourishment—increasing the iron to twenty-five drops every three hours. He remained comfortable through the day, took nourishment, had no bleeding, and passed the night with some quiet sleep.

7th.—Slight haemorrhage once or twice during the day. Nostrils closed by coagula. In the afternoon, the tinct. ferri was omitted, and a pill containing half a grain of opium, two grains of tannin and one of acetate of lead was ordered every two hours. After giving four or five pills, nausea and drowsiness occurred, so that they were given afterwards only occasionally.

8th.—Passed the night comfortably; no haemorrhage, but occasional fainting. The drowsiness increased during the day, and the pill was omitted. Pulse diminishing; at 5 o'clock, P.M., rapid sinking; drinks taken with great difficulty; slight consciousness. Carbonate of ammonia in mist. camphoræ was ordered. At 9 in the evening patient more sunken and insensible, and at 4 o'clock, A.M., of the 9th he expired.

One or two dejections occurred during the illness, and micturition was painful. Sandy deposits in the urine had previously been noticed by his wife, but had not been submitted to analysis.

A haemorrhagic tendency was evidently established in this case, in part natural to the patient, but doubtless increased by the abstinence from animal food, over exertion and general prostration. No organic affection was suspected.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, MAY 5, 1864.

DEATH OF DR. JOHN WARE.

THIS community has so long looked up to Dr. JOHN WARE as one of the leading members of the medical profession, that the announcement of his sudden death, which took place on Friday, the 29th ult., brings to all the sense of a great public loss. As a consulting physician in cases of great responsibility or difficulty, his professional brethren have so long enjoyed his wise counsel that they hardly knew how to spare him. He was endeared to all by the gentleness and kindness of his manner, by his hearty interest in the welfare of the sick, and by his ever fresh and ready intelligence. The profession in this city has never lost one of its number who has filled up a larger measure of honorable devotion to the highest interests of humanity. He was a man of a very complete life. Attaining to a position among the first in purely professional standing, his reputation as a philanthropist was in no degree less. He was a man of most untiring industry. Looking beyond the pecuniary reward of professional success, he always showed an ardent desire to contribute his share to the progress of medical science; and the various well-matured results of his thoughtful professional life which he has published, will take a permanent place in standard medical literature. We feel, as every one must who knew him, that in his death we have lost a personal friend. The great reaper has made sad havoc of late among the respected elders of our profession here, and a heavier burden of responsibility rests upon those who are left behind to live up to the high standard of personal and professional character which they have set up.

At the regular meeting of the Suffolk District Medical Society, held April 30th, 1864, the President, Dr. J. Mason Warren, announced to the Society the death of their distinguished Fellow, and proposed that the regular business be suspended to pay a fitting tribute to his memory; whereupon Dr. Jacob Bigelow rose, and said:—

“ I rise, Mr. President, to interrupt the accustomed order of proceeding, by announcing an event already brought home but too surely to the knowledge of most of us, the death of our honored and beloved associate, Dr. John Ware. Within the last few months we have had occasion more than once to pay to distinguished members of our Society suddenly taken from our midst, the solemn tribute of our last regard. But never has a more general sense pervaded our professional community, of affection and regret, than that which now follows with sad and grateful recollections the memory of a wise, faithful, friendly and blameless physician.

“ Dr. Ware was a surviving representative of a family long honored among us, and of whose pervading and influential reputation, his own character formed no inferior part. Commencing life as an obscure professional student and practitioner in a somewhat humble part of the city, struggling for many years against difficulties, silently building the solid platform which was to sustain his future eminence, he at

length became a man whom society needed, and whose claims and services it was not slow to recognize. He became a writer, a teacher, and for many years an extensive and laborious practitioner, and when at length his impaired health compelled him to forego a large part of his ordinary duties, he found in country retirement, in philosophic studies, in theological inquiries, and in the intercourse of his many friends, a solace congenial to his placid, unaspiring, rational and truth-loving character.

"From the trials to which human nature is doomed, and from which a shorter life might have saved him, he was not destined to find exemption. A brave and noble son, already marked by high promise and qualified by hereditary talent, as well as by filial sympathy, to become the support of his declining years, and the successor of his fame—gave up his young life on the altar of his country. This shock, although manfully borne, and submitted to with Christian fortitude, yet was seen to wear slowly on his already impaired frame, and no doubt accelerated the termination of a life thus abruptly shorn of so large a portion of its necessary parental hope.

"During a lifetime which considerably exceeded the average duration of human existence, he followed with unwavering devotion the path of conscientious duty. His kindly nature forbade him to speak ill even of those who crossed his path, and I do not now know that he had an enemy. The benignity of his temper, the impartiality of his reasoning, the clearness of his perception, the justice of his inferences, and the attractive language in which he conveyed his thoughts, caused his presence to be welcomed by the sick and his counsel to be sought and respected by his professional brethren.

"His opinions on medical subjects are well known. Vindicating the power of his science for good, but deprecating its too frequent *perversion* for evil, he pursued the independent path of professional rectitude, and guarding alike against unsound influences, and impulsive and hasty generalizations, he subordinated to the welfare of the patient the self-love of the practitioner. He did not claim infallibility for his art, nor impute to his own exaggerated skill the inevitable processes of nature. With the frankness and humility which indicate a strong and self-reliant mind, he watched and guided, but never recklessly thwarted, the restorative influences inherent in the unmolested constitution.

"Dr. Ware, knowing the hereditary tendency of his family to cerebral disease, had looked forward with some apprehension to the possible occurrence of chronic, perhaps of paralytic infirmity. May we not say that he was most happy in consummating a beautiful life by what the ancients have fitly termed a beautiful death. His race was run, his peace was made, the mission of his life worthily, nobly fulfilled. There were ties that still bound him to earth, but these were lessening and loosening, and the time of their inevitable disruption was but too obviously at hand.

"Then, with no fiery, throbbing pain,
No cold gradations of decay,
Death broke at once the vital chain,
And freed his soul the nearest way."

"Let us preserve and cherish in our hearts the image of his recollected virtues. Let us strive like him to uphold the just, the honest, the

truthful standard of our science and profession—so that when we shall approach the termination, to some of us already not far remote, we may feel, like him, the sustaining consciousness that we have not lived in vain."

After the conclusion of Dr. Bigelow's remarks, Dr. John Homans spoke as follows:—

"Mr. President, I do not rise to add to the just and comprehensive remarks just made by Dr. Bigelow on the character of Dr. Ware after his arrival at manhood, but to say a few words regarding his youthful habits, and to offer two short resolutions signifying our appreciation of the character and worth of our deceased brother. Dr. Ware entered college in the year 1809, when I first became acquainted with him from his brother, Rev. Henry Ware, Jr., who was in the class above and my classmate. This circumstance brought me into a somewhat intimate acquaintance with the subject of this notice. His industry, his modest demeanor and his truthfulness attracted the observation and secured the esteem of all his associates. Having graduated in 1813, he entered on the study of medicine with the late Dr. John Gorham, with whom I was a student. Here the same moral qualities were conspicuous in him as in college. He evinced a remarkable zeal in the acquisition of medical knowledge, and had a happy faculty of communicating his ideas to others. His exemplary conduct in college is noteworthy on account of the early age at which he entered—a few months over 18 years. I submit the following resolutions for your consideration:—

"Resolved, That in the death of Dr. John Ware, the Society has lost a learned and beloved member, who for more than forty years assiduously and successfully devoted himself to the practice of his profession, and by public teaching to the advancement of medical science.

"Resolved, That his modest and urbane manners, his purity of life and his unflinching integrity have won the esteem and love of all who knew him, and have engraved on our hearts the model of a Christian gentleman.

"Resolved, That a copy of the above be published by the Secretary and presented to his afflicted family."

The above resolutions were unanimously adopted.

From a biographical sketch of Dr. Ware, in the *Daily Advertiser*, we learn that his age at the time of his decease was 68 years. He was son of Rev. Henry and Mary (Clarke) Ware, and was born in Hingham, Mass., 19th December, 1795. His father was for several years minister in Hingham, and was afterwards Hollis Professor of Theology in Cambridge. His mother was daughter of Rev. Jonas Clarke, of Lexington, and granddaughter of Rev. Thomas Hancock, who was grandfather of the celebrated John Hancock. The subject of this notice graduated with high honors at Harvard College in 1813. Immediately after leaving college he began the study of medicine, and received his degree of M.D. in 1816, when he began the practice of his profession in Duxbury, but in 1817 he removed to Boston, where he resided the remainder of his life. He soon acquired an extensive practice, and attained to the highest rank in professional skill. In 1832 he was appointed Professor of the Theory and Practice of Medicine in the Medical Department of Harvard College, and held this office until 1858. He published various medical lectures and discourses; essays on "Croup," on "Delirium Tremens," and on

"Hæmoptysis;" a volume on the "Philosophy of Natural History," and a "Memoir of Henry Ware, Jr." (Boston, 1846.) He was for several years President of the Massachusetts Medical Society. He was also a Fellow of the American Academy of Arts and Sciences. During the year 1828 he was one of the Editors of this JOURNAL.

PREVALENCE OF SMALLPOX IN THE CITY.—This community has been much agitated of late by all sorts of groundless and exaggerated stories of the prevalence of smallpox amongst us. This has amounted almost to a panic in some parts of the city, and has had the effect, we are told, of deterring some people from coming into it from the country. False rumors are current that some of the public schools have been closed on account of it. We cannot learn that this is true in a single instance; as why should it be? All the children in the public schools are fully protected by vaccination. The simple truth is, that there happen to be at the present time more cases of smallpox in Boston than usual; but nearly or quite all the deaths reported from it have occurred in the State Hospital at Rainsford Island, miles away. The very diligence of the new City Physician in instituting a general inquiry, through the Police, to ascertain whether the whole community is protected, as it should be, by vaccination, has had the effect to increase the alarm. We have the best authority for stating that the disease, at least in its severe form, is limited almost entirely to strangers who come to us from the British Provinces, or from country towns in the interior, who have never been vaccinated. Were it not for this introduction of culpably unprotected persons from year to year, the disease would die out here for want of fuel.

A FRIEND who has recently passed a successful examination at Washington, qualifying him for the rank of Surgeon of Volunteers, gives us the following account of his examination:—

"The examination commenced on Monday, and was continued every day through the week. Four days of written replies to questions, the candidates being placed in a room, with writing materials *et preterna nihil*, except an orderly to prevent communications. Fifth day, each candidate taken alone by one of the commission of three. Oral examination. Sixth day, at Douglas Hospital, in the wards and dead-house. Operations on the subject. The object of the Board seemed to be not merely to ascertain whether the candidates knew enough to be a Surgeon or Assistant Surgeon of Volunteers, but to discover the whole extent of his attainments. In anatomy, chemistry, physiology, pathology, his point of saturation (so to speak) was reached. This you will see can be readily done by a division of subjects among the members of the Board. I should have said that an autobiography is required and a disclaimer of any connection at any time with any form of irregular practice. With all this you will see that the Government are put in possession of the full professional value of each of its medical officers of this corps."

DR. J. L. CHANDLER, of St. Albans, Vt., in a note to the Editors, says:—"I have run upon Dr. Gallup's 'Epidemics of Vermont,' which

I had not seen for the last forty years, and find myself in error (see JOURNAL, p. 202) in supposing the 'spotted fever' of fifty years ago 'did not bear the same aspect' which belongs to the present so called epidemic. I think myself in error, too, when I said that Dr. Gallup named it 'typhus syncopal.' It was probably Dr. Tully, of Connecticut, who gave that name to this, or some other form of malignant fever prevailing at that time. My own impressions, made a half century ago, in untutored boyhood, should succumb at once to the clear descriptions of the disease in the Doctor's book, where the same symptoms of cerebro-spinal meningitis reported in the present epidemic, are portrayed. His account of the results of varying methods of treatment, though perhaps inconclusive, are nevertheless interesting and suggestive."

CAUTION.—We advise physicians to be on their guard against life insurance agents who seek to induce them to insure their lives on the promise of an appointment as medical examiner for the company the agent represents—the position to be immensely lucrative, the physician to be the *sole examiner*. The position turns out not to be so very lucrative, and somehow or other *more than one physician finds himself to be the sole examiner*. A certain agent of a New York company has been practising this game successfully in this city.

THE name of Dr. W. O. Johnson, formerly of Cambridge, was accidentally omitted from the list of those who have joined the Suffolk District Med. Society the last year, published in this JOURNAL April 14.

DR. JAMES BRYAN, of Philadelphia, Surgeon U. S. Vols., is now in charge of the U. S. General Hospital at Pittsburg, Pa. This hospital is provided with 500 beds, some of them, however, being in tents, which afford comfortable quarters for the milder cases. It is situated about two miles from the city, on a pleasant and healthy elevation, and its internal arrangements are represented as admirably contrived and its regulations faithfully executed.

**VITAL STATISTICS OF BOSTON.
FOR THE WEEK ENDING SATURDAY, APRIL 30th, 1864.**

DEATHS.

| | Males. | Females. | Total. |
|---|--------|----------|--------|
| Deaths during the week | 53 | 50 | 103 |
| Ave. mortality of corresponding weeks for ten years, 1853—1863, | 38.5 | 38.3 | 76.8 |
| Average corrected to increased population | 00 | 00 | 84.41 |
| Death of persons above 90 | 0 | 0 | 0 |

DEATHS IN BOSTON for the week ending Saturday noon, April 30th, 103. Males, 53—Females, 50.—Accident, 3—inflammation of the bowels, 4—disease of the brain, 7—inflammation of the brain, 4—bronchitis, 3—consumption, 13—convulsions, 1—croup, 7—diarrhoea, 2—diphtheria, 4—dropsy, 1—dropsy of the brain, 2—drowned, 1—crysipelas, 1—scarlet fever, 6—typhoid fever, 1—disease of the heart, 3—homicide, 1—insanity, 1—disease of the kidneys, 3—congestion of the lungs, 5—inflammation of the lungs, 8—marasmus, 2—old age, 1—phlebitis, 1—pleurisy, 1—premature birth, 2—rheumatism, 2—scalded, 1—smallpox, 4—suffocation, 1—tabes mesenterica, 1—teething, 1—tumor, 1—unknown, 4.

Under 5 years of age, 45—between 5 and 20 years, 13—between 20 and 40 years, 20—between 40 and 60 years, 13—above 60 years, 12. Born in the United States, 84—Ireland, 14—other places, 5.